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THESE DRAWINGS SHALL NOT BE UTILIZED BY ANY PERSON, FIRM OR CORPORATION WITHOUT THE SPECIFIC WRITTEN PERMISSION OF BL COMPANIES

ELECTRICAL SPECIFICATIONS

16050 – ELECTRICAL GENERAL PROVISIONS

- A. REGULATORY REQUIREMENTS: ALL WORK SHALL BE DONE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES, THE CONNECTICUT STATE BUILDING CODE, AND IN PARTICULAR, NFPA 70, WHERE APPROVAL STANDARDS HAVE BEEN ESTABLISHED BY OSHA, UL, ASME, AGA, AMCA, ANSI, ARI, NFPA, STATE FIRE INSURANCE REGULATORY BODY, AND FM, FOLLOW THESE STANDARDS WHETHER OR NOT INDICATED ON THE DRAWINGS AND SPECIFICATIONS. INCLUDE COST OF WORK REQUIRED TO COMPLY WITH REQUIREMENTS OF THESE AUTHORITIES IN THE ORIGINAL PROPOSAL. COMPLY WITH IEEE C2 WHERE APPLICABLE. ARRANGE WITH LOCAL AND STATE AUTHORITIES AND UTILITY COMPANIES FOR PERMITS, FEES, AND SERVICE CONNECTIONS, VERIFYING LOCATIONS AND ARRANGEMENT, AND PAY CHARGES INCLUDING INSPECTIONS.
- B. SITE VISITATION: VISIT THE SITE OF THE PROPOSED CONSTRUCTION TO BECOME THOROUGHLY FAMILIAR WITH DETAILS OF WORK AND WORKING CONDITIONS, ADVISE OWNER OF DISCREPANCIES.
- C. MATERIALS AND WORKMANSHIP: PROVIDE LABOR, MATERIALS, APPARATUS, AND APPLIANCES ESSENTIAL TO THE COMPLETE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHETHER MENTIONED IN THE CONTRACT DOCUMENTS OR NOT. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND LISTED FOR THE DESCRIBED APPLICATION.
- D. NOISE AND VIBRATION: PROVIDE OPERATING SYSTEM COMPONENTS FREE OF OBJECTIONABLE VIBRATION OR NOISES. STATIONARILY AND DYNAMICALLY BALANCE ROTATING EQUIPMENT, AND MOUNT OR FASTEN SO THAT NO EQUIPMENT VIBRATION WILL BE TRANSMITTED TO THE BUILDING. RECTIFY OBJECTIONABLE CONDITIONS WITH NO ADDITIONAL COMPENSATION.
- E. SUBMITTALS: SEVEN (7) COPIES OF SHOP DRAWINGS AND MANUFACTURERS CATALOG SHEETS FOR THE FOLLOWING EQUIPMENT/SYSTEMS SHALL BE SUBMITTED FOR APPROVAL (ELECTRONIC COPIES OF SHOP DRAWINGS IN PDF FORMAT ARE ALSO ACCEPTABLE);
- CONDUIT AND WIRE.
 - PANELBOARDS, CIRCUIT BREAKERS, AND ENCLOSURES.

16060 – SECONDARY GROUNDING

- A. PROVIDE GROUNDING SYSTEMS, INCLUDING POWER SYSTEM GROUNDING, ELECTRICAL EQUIPMENT AND RACEWAY GROUNDING AND BONDING, STRUCTURAL STEEL GROUNDING, AND MISCELLANEOUS SYSTEM GROUNDING.
- B. BUILDING EQUIPMENT GROUND:
- PROVIDE A SEPARATE, INSULATED EQUIPMENT GROUNDING CONDUCTOR IN ALL FEEDERS AND BRANCH CIRCUITS. TERMINATE EACH END ON A GROUNDING LUG, BUS, OR BUSHING. DO NOT USE CONDUIT AS GROUNDING CONDUCTOR.
 - PROVIDE OZ GEDNEY TYPE "B" BONDING JUMPER AT ALL EXPANSION JOINTS, POINTS OF ELECTRICAL DISCONTINUITY OR CONNECTIONS IN CONDUIT WHERE FIRM MECHANICAL BOND IS NOT POSSIBLE, SUCH AS FLEXIBLE CONNECTIONS, INSULATION COUPLINGS, ETC.
 - BOND EVERY ITEM OF EQUIPMENT SERVED BY THE ELECTRICAL SYSTEM TO THE BUILDING EQUIPMENT GROUND SYSTEM. THIS INCLUDES NEW SWITCHBOARDS, PANELBOARDS, DISCONNECT SWITCHES, RECEPTACLES, CONTROLS, FANS, AIR HANDLING UNITS, PUMPS AND FLEXIBLE DUCT CONNECTIONS.

16070 – SUPPORTING DEVICES

- A. INSTALLATION:
- SECURE EQUIPMENT AND CONDUIT WITH HANGER RODS, CONDUIT CLAMPS, EXPANSION ANCHORS, BEAM CLAMPS OR BOLTS AS REQUIRED.
 - FABRICATE SUPPORTS FROM STRUCTURAL STEEL OR STEEL CHANNEL, RIGIDLY WELDED OR BOLTED TO PRESENT A NEAT APPEARANCE. USE HEXAGON HEAD BOLTS WITH SPRING LOCK WASHERS UNDER ALL NUTS.
 - WHERE MULTIPLE RUNS OF CONDUIT CAN BE RUN GROUPED TOGETHER, RUN CONDUIT IN RACKS SUPPORTED FROM THE BUILDING STRUCTURE. PROVIDE FOR FUTURE USE OF RACK BY PROPERLY PLANNING ROUTING OF CONDUITS IN AND THROUGH RESTRICTED AREAS SUCH AS THROUGH WALLS AND AROUND MECHANICAL AND ELECTRICAL EQUIPMENT.

16075 – ELECTRICAL IDENTIFICATION

- A. PROVIDE ENGRAVED THREE-LAYER LAMINATED PLASTIC NAMEPLATES WITH WHITE LETTERS ON A BLACK BACKGROUND FOR ALL NEW EQUIPMENT ENCLOSURES, INCLUDING PANELBOARDS, DISCONNECT SWITCHES AND CIRCUIT BREAKERS.
- B. PERMANENTLY LABEL ALL RECEPTACLES, MOTORS, POWER DISCONNECTS, WALL SWITCHES, AND REMOTE LOADS WITH THE PANEL AND CIRCUIT NUMBER SERVING THE DEVICE.
- C. PROVIDE WIRE AND CABLE MARKERS (SPLIT SLEEVE OR TUBING TYPE) ON ALL CONDUCTORS. PROVIDE WIRE MARKERS ON EACH CONDUCTOR IN SPLICE BOXES, PULL BOXES, AND AT FIRST LOAD CONNECTION ON HOMERUN. IDENTIFY WITH BRANCH CIRCUIT OR FEEDER NUMBER FOR POWER AND LIGHTING CIRCUITS, AND WITH CONTROL WIRE NUMBER AS INDICATED ON EQUIPMENT MANUFACTURERS SHOP DRAWING FOR CONTROL WIRING.
- D. WIRE COLOR CODE
- (20BY/120V, 3 PH):
PHASE A: BLACK
PHASE B: RED
PHASE C: BLUE
NEUTRAL: WHITE
GROUND: GREEN
ISOLATED GROUND: GREEN/ YELLOW STRIPE

16120 – WIRE AND CABLE

- A. BUILDING WIRE:
- FEEDERS AND BRANCH CIRCUITS LARGER THAN NO. 6 AWG: COPPER, STRANDED CONDUCTOR, 600 VOLT INSULATION, THHN/THWN-2 OR XHHW-2, IN ACCORDANCE WITH NEMA WCS AND NEMA WC3.
 - FEEDERS AND BRANCH CIRCUITS NO. 6 AWG AND SMALLER: COPPER CONDUCTOR, 600 VOLT INSULATION, THHN/THWN-2 OR XHHW-2, SMALLER THAN NO. 8 AWG, SOLID CONDUCTOR IN ACCORDANCE WITH NEMA WCS. CONNECTIONS TO MOTORS, TRANSFORMERS, SUSPENDED LIGHT FIXTURES, AND OTHER VIBRATING EQUIPMENT SHALL BE STRANDED.
 - CONTROL CIRCUITS: COPPER, STRANDED CONDUCTOR 600 VOLT INSULATION, THHN/THWN-2.
- B. WIRING CONNECTIONS AND SPLICES:
- CONNECT AND SPICE WIRE NO. 8 AWG AND SMALLER WITH SELF-INSULATING, WIRE NUT CONNECTORS.
 - SPLICE ALL NO. 6 AWG AND LARGER COPPER CONDUCTORS WITH HIGH CONDUCTIVITY, WROUGHT COPPER, COLOR-KEYED COMPRESSION CONNECTOR SIMILAR TO BURNDY OR TAB.
 - SET SCREW TYPE CONNECTORS ARE ONLY ACCEPTABLE ON THE LOAD SIDE LUGS OF CLASS I AND II SWITCHBOARDS, PANELBOARDS, CIRCUIT BREAKERS, FUSIBLE SWITCHES AND ON INDIVIDUAL MOTOR CONTROLLERS.
 - WHERE THREE OR MORE CONDUCTORS LARGER THAN NO. 8 AWG ARE SPLICED TOGETHER, UTILIZE A SCREW-TYPE POWER DISTRIBUTION BLOCK SECURELY MOUNTED IN JUNCTION BOX.
- C. GENERAL WIRING METHODS:
- USE NO WIRE SMALLER THAN NO. 12 AWG FOR POWER AND LIGHTING CIRCUITS, AND NO SMALLER THAN NO. 14 AWG FOR CONTROL WIRING. PROVIDE MINIMUM OF NO. 12 AWG FOR ALL SWITCH LEGS. PROVIDE NEUTRAL CONDUCTOR OF THE SAME SIZE AS THE PHASE CONDUCTORS TO WHICH IT IS ASSOCIATED. COMMON NEUTRALS SHALL NOT BE USED FOR BRANCH CIRCUITS, UNLESS SPECIFICALLY NOTED OTHERWISE.
 - USE NO. 10 AWG CONDUCTOR MINIMUM FOR 20 AMPERE, 120 VOLT BRANCH CIRCUITS LONGER THAN 100 FEET, AND FOR 20 AMPERE, 208 VOLT BRANCH CIRCUITS LONGER THAN 150 FEET.
 - PROVIDE HOMERUN AND FEEDER CONDUCTORS OF CONTINUOUS LENGTH WITHOUT JOINT OR SPlice FROM OVERCURRENT DEVICE TO FIRST OUTLET.
 - INSTALL ALL WIRING IN CONDUIT.
 - NEATLY TRAIN AND LACE WIRING INSIDE BOXES, PANELBOARDS, SWITCHGEAR, MOTOR CONTROL CENTERS, WIRING GUTTERS, AND OTHER EQUIPMENT.
 - PROVIDE APPROPRIATELY SIZED LUGS AND TERMINATIONS AT ALL EQUIPMENT. DO NOT REDUCE WIRE SIZE AT EQUIPMENT LUGS.
 - DRAWINGS INDICATE PROPOSED CIRCUITING ONLY, AND DO NOT INDICATE EVERY CONDUCTOR UNLESS INTENT IS UNCLEAR AND FURTHER CLARIFICATION IS REQUIRED.
 - MAXIMUM CONDUIT FILL SHALL BE THREE PHASE CONDUCTORS (ON DIFFERENT PHASES), THREE INDIVIDUAL NEUTRAL CONDUCTORS (FOR EACH 120V OR 277V BRANCH CIRCUIT) AND GROUND CONDUCTOR.

D. WIRING INSTALLATION IN RACEWAYS:

- PULL ALL CONDUCTORS INTO A RACEWAY AT THE SAME TIME. USE UL LISTED WIRE PULLING LUBRICANT. DO NOT EXCEED MANUFACTURER'S RECOMMENDED TENSION.
- INSTALL WIRE IN RACEWAY AFTER INTERIOR OF BUILDING HAS BEEN PHYSICALLY PROTECTED FROM THE WEATHER AND ALL MECHANICAL WORK LIKELY TO INJURE CONDUCTORS HAS BEEN COMPLETED.
- COMPLETELY AND THOROUGHLY SWAB RACEWAY SYSTEM BEFORE INSTALLING CONDUCTORS.
- REMOVE AND DISCARD CONDUCTORS CUT TOO SHORT OR INSTALLED IN WRONG RACEWAY. DO NOT INSTALL CONDUCTORS WHICH HAVE BEEN REMOVED FROM A RACEWAY.

16130 – BOXES

A. OUTLET BOXES:

- PROVIDE GALVANIZED OR CADMIUM-PLATED PRESSED STEEL OUTLET BOXES SUITABLE FOR THE CONDITIONS OF EACH OUTLET. PROVIDE MULTI-GANG OUTLETS OF SINGLE BOX DESIGN; SECTIONAL BOXES WILL NOT BE ACCEPTABLE.
- PROVIDE DEEP TYPE CAST METAL OUTLET BOXES LOCATED IN DAMP LOCATIONS EXPOSED TO WEATHER OR EXPOSED AREAS SUBJECT TO DAMAGE, COMPLETE WITH GASKETED COVER AND THREADED HUBS.
- PROVIDE OUTLET BOXES OF SUFFICIENT VOLUME TO ACCOMMODATE THE NUMBER OF CONDUCTORS ENTERING THE BOX IN ACCORDANCE WITH THE REQUIREMENTS OF NFPA 70, AND NOT LESS THAN 1-1/2 INCH DEEP UNLESS SHALLOWER BOXES ARE REQUIRED BY STRUCTURAL CONDITIONS AND ARE ESPECIALLY APPROVED BY A/E.
- PROVIDE NON METALLIC NEMA 13X TYPE OUTLET BOXES IN CORROSIVE ENVIRONMENTS.

B. PULL AND JUNCTION BOXES:

- PROVIDE GALVANIZED SHEET METAL BOXES CONFORMING TO NEMA OS 1. PROVIDE HINGED ENCLOSURES FOR ANY BOX LARGER THAN 12 INCHES IN ANY DIMENSION, UNLESS OTHERWISE NOTED.
- PROVIDE SEPARATE PULL BOXES AND JUNCTION BOXES FOR ELECTRIC POWER, CONTROL, AND COMMUNICATION SYSTEMS.

C. INSTALLATION:

- SET BOXES INSTALLED IN CONCEALED LOCATIONS FLUSH WITH THE FINISH SURFACES, AND PROVIDE WITH THE PROPER TYPE EXTENSION RINGS AND/OR COVERS WHERE REQUIRED.
- PROVIDE RECESSED OUTLET BOXES IN FINISHED AREAS; SECURE BOXES TO INTERIOR WALL AND PARTITION STUDS, ACCURATELY POSITIONING TO ALLOW FOR SURFACE FINISH THICKNESS.
- ALIGN WALL-MOUNTED OUTLET BOXES FOR SWITCHES, THERMOSTATS, AND SIMILAR DEVICES. INSTALL ALL GROUPED DEVICE LOCATIONS NEAT AND SYMMETRICAL. COORDINATE WITH A/E BEFORE ROUGH-IN.
- LOCATE PULL BOXES AND JUNCTION BOXES ABOVE ACCESSIBLE CEILINGS OR IN UNFINISHED AREAS.
- PROVIDE PULL OR JUNCTION BOXES IN ACCESSIBLE LOCATIONS WHERE SHOWN OR AT LEAST EVERY 150 FEET IN STRAIGHT RUNS, OR AS REQUIRED BY CODE OR AS NEEDED FOR PROPER INSTALLATION OF WIRING AND JUNCTIONS.
- IDENTIFY ALL JUNCTION BOXES BY CIRCUIT NUMBER ON COVER WITH LEGIBLE PERMANENT INK MARKER.
- COVER PLATES OF ALL JUNCTION BOXES USED FOR FIRE ALARM WIRING SHALL BE PAINTED "RED".

16132 – CONDUIT

A. MATERIALS:

- PROVIDE RIGID METAL CONDUIT AND FITTINGS IN ACCORDANCE WITH ANSI C80.1; HOT DIP GALVANIZED.
- PROVIDE ELECTRICAL METALLIC TUBING (EMT) AND FITTINGS IN ACCORDANCE WITH ANSI C80. 3; HOT-DIPPED GALVANIZED TUBING.

B. CONDUIT SIZING, ARRANGEMENT AND SUPPORT:

- MINIMUM SIZE OF CONDUIT SHALL BE 3/4-INCH. INDICATED SIZES ARE MINIMUM BASED ON THHN/THWN-2 OR XHHW-2 COPPER WIRE AND LARGER SIZES MAY BE USED FOR CONVENIENCE OF WIRE PULLING.
- IN UNFINISHED AREAS WITHOUT CEILINGS, CONDUIT MAY BE RUN EXPOSED OVERHEAD. INSTALL ALL CONDUIT, PARALLEL OR PERPENDICULAR TO WALLS AND ADJACENT PIPING. NEATLY ROUTE CONDUIT IN A COMMON RACK WHERE POSSIBLE.
- MAINTAIN MINIMUM 6 INCH CLEARANCE BETWEEN CONDUIT AND PIPING. MAINTAIN 12 INCH CLEARANCE BETWEEN CONDUIT AND HEAT SOURCES SUCH AS FLUES, STEAM PIPES, AND HEATING APPLIANCES. ROUTE CONDUIT TO ALLOW FOR EQUIPMENT ACCESS AND MAINTENANCE.
- ARRANGE CONDUIT SUPPORTS TO PREVENT DISTORTION OF ALIGNMENT BY WIRE PULLING OPERATIONS. FASTEN CONDUIT SECURELY TO BUILDING STRUCTURE USING CLAMPS, HANGERS AND THREADED ROD. ROUTE CONDUIT TO ALLOW FOR EQUIPMENT ACCESS AND MAINTENANCE.
- PROVIDE PULL LINE IN ALL EMPTY CONDUIT.

C. CONDUIT INSTALLATION SCHEDULE:

- INTERIOR:
 - EXPOSED:
 - RIGID METAL CONDUIT IN AREAS SUBJECT TO MOISTURE, CORROSIVE AGENTS PHYSICAL ABUSE, IN UNCONDITIONED SPACES OR FOR CONDUIT SIZES GREATER THAN 4 INCHES.
 - ELECTRICAL METALLIC TUBING IN AREAS NOT SUBJECT TO MOISTURE, CORROSIVE AGENTS OR PHYSICAL ABUSE.
 - CONCEALED:
 - RIGID METAL CONDUIT IN AREAS SUBJECT TO MOISTURE OR CORROSIVE AGENTS.
 - ELECTRICAL METALLIC TUBING IN AREAS NOT SUBJECT TO MOISTURE OR CORROSIVE AGENTS.
 - CAST IN CONCRETE:
 - RIGID NONMETALLIC CONDUIT.
- CONNECTIONS TO EQUIPMENT:
 - LIQUDTIGHT FLEXIBLE METAL CONDUIT IN AREAS SUBJECT TO MOISTURE, HIGH HUMIDITY, OR CORROSIVE AGENTS.
 - FLEXIBLE METAL CONDUIT IN DRY, NONCORROSIVE AREAS.

D. RIGID GALVANIZED STEEL CONDUIT (RGS) SHALL BE USED FOR WIRING IN THE FOLLOWING LOCATIONS:

- WITHIN CONCRETE SLABS
- EXPOSED TO MOISTURE AND MECHANICAL DAMAGE
- EXTERIOR INSTALLATIONS

E. RIGID POLYVINYL CHLORIDE (PVC) SHALL BE USED FOR WIRING IN THE FOLLOWING LOCATIONS:

- BURIED UNDER GRADE FOR SERVICE ENTRANCE PRIMARY AND SECONDARY CONDUCTORS.
- LIGHTING AND POWER BRANCH CIRCUIT WIRING BURIED UNDER GRADE
- BELOW CONCRETE SLABS
- EXPOSURE TO MOISTURE
- SCHEDULE 40 PVC TYPICAL EXCEPT WHERE SUBJECT TO VEHICULAR TRAFFIC WHERE SCHEDULE 80 SHALL BE INSTALLED.

16442 – PANELBOARDS

- A. FURNISH AND INSTALL NEW BREAKERS IN NEW (AND EXISTING) SERVICE, DISTRIBUTION, LIGHTING, POWER AND APPLIANCE PANELBOARDS. WHEN APPLICABLE, PANELBOARDS MAY BE SERVICE ENTRANCE RATED. WHERE NEW CIRCUIT BREAKERS ARE INSTALLED IN EXISTING PANELS, MATCH MANUFACTURER AND AIC RATING.
- B. MANUFACTURERS:
- CUTLER-HAMMER (WESTINGHOUSE).
 - GENERAL ELECTRIC.
 - SIEMENS.
 - SQUARE D.
- C. PROVIDE WITH MAIN LUGS AND BREAKERS OR FUSES AS SCHEDULED ON THE DRAWINGS. ATTACH CONNECTOR TO PANEL BUS WITH TWO BOLTS PER LUG. PROVIDE CAPTIVE TYPE BOLTS OR STUDS TO FACILITATE REINSTALLATION OF THE LUGS WITH THE WIRE ATTACHED.
- D. PROVIDE PANELBOARDS WITH RATINGS SCHEDULED AND DESIGNED FOR ALL INDICATED DEVICES AND SPACES, COMPLETE WITH TAPS AND TRIM AND COPPER PHASE, NEUTRAL, AND GROUND BUS. PANELBOARDS AND CIRCUIT BREAKERS SHALL BE RATED AT THE SCHEDULED SHORT CIRCUIT DUTY. PANELBOARD COVERS SHALL BE FLUSH OR SURFACE TRIM WITH ACCESS DOOR IN MAIN COVER.
- E. INSTALLATION:
- INSTALL PANELBOARDS PLUMB AND FLUSH WITH WALL FINISHES, IN ACCORDANCE WITH NEMA PB 1.1. MOUNT SECURELY TO WALLS OR STRUCTURAL SPACES. MOUNT FLOOR MOUNTED PANELBOARDS ON 4 INCH HOUSEKEEPING PAIS.
 - PROVIDE TYPEWRITTEN CIRCUIT DIRECTORY FOR EACH BRANCH CIRCUIT PANELBOARD MOUNTED IN PERMANENT, CLEAR LEXAN CARD HOLDER LOCATED ON INSIDE OF DOOR. PREPARE DIRECTORIES ONLY AFTER PERMANENT ROOM NUMBERS HAVE BEEN ASSIGNED. DO NOT USE ROOM NUMBERS SHOWN ON CONSTRUCTION DRAWINGS.
 - DIRECTORY SHALL INCLUDE EACH ACTIVE AND SPARE CIRCUIT, WITH DISTINCT AND PRECISE CIRCUIT DESCRIPTIONS; NO TWO CIRCUITS MAY SHARE THE SAME LOAD DESCRIPTION.

ELECTRICAL GENERAL NOTES

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH AND SHALL CONFORM IN ALL ASPECTS TO THE NATIONAL ELECTRICAL CODE (NFPA CODES & LOCAL BUILDING CODES).
- ALL PERMITS, LICENSES AND CERTIFICATES COVERING THE COMPLETE INSTALLATION OF THE ELECTRICAL WORK SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR
- ALL CORE-BORING, BACKFILLING AND RESURFACING REQUIRED FOR THE ELECTRICAL WORK SHALL BE PROVIDED BY THE GENERAL CONTRACTOR (G.C.).
- ALL CUTTING PATCHING AND REFINISHING OF WALLS, FLOORS & CEILINGS REQUIRED FOR THE ELECTRICAL WORK SHALL BE PROVIDED FOR BY THE GENERAL CONTRACTOR.
- THESE DRAWINGS ARE DIAGRAMMATIC ONLY; EXACT LOCATIONS OF ALL CONDUIT, ETC. MUST BE FIELD DETERMINED AND RUN TO AVOID OBSTRUCTIONS AND MECHANICAL EQUIPMENT.
- UNLESS OTHERWISE NOTED, MINIMUM WIRE SIZE SHALL BE #12 AWG, THWN-2 COPPER; MINIMUM CONDUIT SIZE SHALL BE 3/4" C. UNLESS OTHERWISE SPECIFIED 20A, 120V BRANCH CIRCUIT WIRING SHALL BE 2#12, #12G.
- WORK NOT INCLUDED IN CONTRACT ("N.I.C."); ANY WIRING OR EQUIPMENT NOT TO BE FURNISHED BY CONTRACTOR SHALL BE INDICATED ON PLANS AS N.I.C.
- SITE VISITATION – PRIOR TO SUBMITTING A BID FOR HIS WORK, THE CONTRACTOR SHALL VISIT THE SITE TO INSPECT THE NATURE AND EXTENT OF THE EXISTING CONDITIONS AND EQUIPMENT, AND DETERMINE HOW THEY WILL AFFECT THE INSTALLATION OF ELECTRICAL WORK. NO ADDITIONAL PAYMENT IN EXCESS OF THE CONTRACT PRICE WILL BE AUTHORIZED FOR "EXTRA" WORK PERFORMED DUE TO EXISTING CONDITIONS WHICH ARE OBVIOUS UPON INSPECTION.
- ALLOWANCES ARE TO BE INCLUDED FOR UNFORESEEN CONDITIONS THAT MAY AFFECT THE CONTRACTOR'S SCOPE OF WORK. MINOR DEVIATIONS REQUIRED FOR ACCOMPLISHING THE INTENT OF THIS DESIGN ARE TO BE INCLUDED IN THAT ALLOWANCE.
- METAL CLAD CABLE, "MC CABLE" IS NOT ACCEPTABLE ON THIS PROJECT.
- ALL EQUIPMENT AND DEVICES SHALL BE NEW & BEAR U.L. LABEL. ALL DEVICES SHALL BE "SPECIFICATION" GRADE.
- WORKMANSHIP: ONLY THE BEST IN WORKMANSHIP IN ACCORDANCE WITH PRESENT STANDARDS WILL BE ACCEPTABLE. ANY WORK INSTALLED AND ADJUDGED BY THE ENGINEER TO BE BELOW STANDARDS SHALL BE TAKEN OUT AND REPLACED WITH PROPERLY DONE WORK AT CONTRACTOR'S EXPENSE.
- GUARANTEE: CONTRACTOR SHALL GUARANTEE ALL EQUIPMENT AND WRING TO BE FREE FROM INHERENT MECHANICAL AND ELECTRICAL DEFECTS FOR A PERIOD OF ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION OF PROJECT. ALL DEFECTS SHALL BE REPAIRED, DURING THIS PERIOD, AT NO CHARGE TO OWNER (MISUSE OR ABUSE CAUSED PROBLEMS EXCEPTED).
- SUBSTITUTIONS OF EQUIPMENT: SPECIFIED PRODUCTS SHALL BE USED AS THE BASIS OF BID AND SHALL BE PROVIDED; WHERE 2 OR MORE MANUFACTURERS ARE LISTED, THE CHOICE IS AT THE CONTRACTOR'S OPTION. AN APPROVED EQUAL SHALL BE DETERMINED BY ENGINEER.
- ALL 20A, 120V HOME RUNS GREATER THAN 100' SHALL BE #10 WIRE MINIMUM.
- CONTRACTOR SHALL FIELD VERIFY NAMEPLATE LOADS OF ALL EQUIPMENT (OWNER SUPPLIED) TO INSURE PROPER WIRE SIZING AND OVERCURRENT PROTECTION AND SHALL NOTIFY ENGINEER OF DISCREPANCIES.
- CONTRACTOR SHALL SEAL ALL ELECTRICAL PENETRATIONS THRU FIRE RATED PARTITIONS WITH FIRE RATED MATERIAL EQUAL TO DOW CORNING SILICONE RTV FOAM AS A MINIMUM. MATERIAL SELECTION SHALL BE BASED ON RATING OF PARTITION PENETRATED.
- ALL SUPPLEMENTARY STEEL REQUIRED FOR ELECTRICAL WORK SHALL BE PROVIDED BY THE CONTRACTOR.
- PROVIDE INSULATED GROUNDING CONDUCTOR IN ALL CONDUITS AND CABLE ASSEMBLIES AS NECESSARY TO COMPLY WITH NEC.
- ALL EMPTY CONDUITS FOR FUTURE WORK SHALL BE PROVIDED WITH A PULL WIRE.
- ELECTRICAL CONTRACTOR TO COORDINATE EXACT PLACEMENT OF ALL DEVICES SHOWN ON THE ELECTRICAL CONSTRUCTION DOCUMENTS WITH CIVIL DRAWINGS PRIOR TO FINAL PLACEMENT.
- PANEL DIRECTORIES SHALL BE COMPLETELY FILLED IN AT COMPLETION OF JOB IN ACCORDANCE WITH NEC 408.4.
- AT THE COMPLETION OF THE JOB, IT WILL BE THE ELECTRICAL CONTRACTOR'S RESPONSIBILITY TO TURN OVER TO THE OWNER AN AS-BUILT-DRAWING IN REPRODUCIBLE FORM. THIS DRAWING DOES NOT HAVE TO BE MADE FROM SCRATCH; THE CONTRACT SITE PLANS MAY BE USED AS BACKGROUNDS WITH THE ACTUAL CIRCUITING CHANGES ADDED.
- PRIOR TO THE CONTRACTOR BEING RELEASED FROM ALL OBLIGATIONS, HE WILL OBTAIN AND TURN OVER TO THE OWNER THE ORIGINAL COPY OF THE "CERTIFICATE OF ELECTRICAL INSPECTION".

ELECTRICAL GENERAL DEMOLITION NOTES

- VISIT AND INSPECT THE JOB SITE PRIOR TO BIDDING AND BECOME FAMILIAR WITH ALL EXISTING CONDITIONS. INCLUDE THE COST OF THE WORK REQUIRED TO ACCOMMODATE THE EXISTING CONDITIONS IN THE BID PROPOSAL.
- THE INTENT OF THE WORK IS TO REMOVE, REPLACE OR RELOCATE ALL ELECTRICAL DEVICES, WIRING AND EQUIPMENT AS SHOWN ON THE DRAWINGS. NOT ALL DEVICES ARE SHOWN. THE CONTRACTOR IS RESPONSIBLE FOR REVIEWING THE DRAWINGS AND PROVIDING MISCELLANEOUS REMOVALS AND RELOCATION AS REQUIRED BY THAT WORK.
- DEMOLITION WORK SHOWN ON THESE DRAWINGS IS BASED ON LIMITED FIELD OBSERVATION AND EXISTING RECORD DOCUMENTS. REPORT DISCREPANCIES TO ENGINEER BEFORE DISTURBING EXISTING INSTALLATION. THESE DRAWINGS SHOW EQUIPMENT LOCATIONS ONLY. WIRING SHOWN IS SCHEMATIC IN NATURE.
- UNLESS OTHERWISE NOTED, DISCONNECT AND REMOVE ALL ELECTRICAL EQUIPMENT AND DEVICES SHOWN HATCHED OR WITH DASHED LINE, INCLUDING RELATED CONDUIT AND WIRE, BACK TO SOURCE OF SUPPLY OR NEXT DEVICE OUT OF DEMOLITION AREA. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING EXISTING DEVICES AND FIXTURES NOT REMOVED DURING DEMOLITION.

ELECTRICAL SYMBOL LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	JUNCTION BOX		SURGE PROTECTION DEVICE, FBO		SECURITY CAMERA AND ARM
	SURFACE MOUNTED PANEL BOARD		CONTROL WIRING.		HANDHOLE
	SINGLE POLE TOGGLE SWITCH. (48" A.F.F. UNLESS NOTED OTHERWISE)		LINE VOLTAGE WIRING.		GROUND
	TIME CLOCK.		HOME RUN.		

NOTE:
NOT ALL SYMBOLS MAY APPEAR ON THE DRAWINGS.

ELECTRICAL ABBREVIATIONS

A OR AMP	AMPERES	HOA	HANDS-OFF AUTOMATIC SWITCH	P	POLE
AAC	ABOVE ACCESSIBLE CEILING	HP	HORSEPOWER	PB	PULL BOX
AC	ALTERNATING CURRENT	HVAC	HEATING, VENTILATING AND AIR CONDITIONING	PC	PULL CHAIN
ACT	ABOVE COUNTER TOP	IG	ISOLATED GROUND	PE	PNEUMATIC ELECTRIC SWITCH
AF	ABOVE FINISHED FLOOR	IMC	INTERMEDIATE METALLIC CONDUIT	PH	PHASE
AFG	ABOVE FINISHED GRADE			P/T	POTENTIAL TRANSFORMER
AHJ	AUTHORITY HAVING JURISDICTION			PVC	POLYVINYL CHLORIDE
AHU	AIR HANDLING UNIT.	JB	JUNCTION BOX		
AIC	INTERRUPTING CAPACITY(RMS SYMMETRICAL AMPERES)			RGS	RIGID GALVANIZED STEEL
ATS	AUTOMATIC TRANSFER SWITCH	KMIL	1000 CIRCULAR MILS	RMC	RIGID METALLIC CONDUIT
BFG	BELOW FINISHED GRADE	KV	KILOVOLTS (1000 VOLTS)	RTU	ROOFTOP UNIT
BKBD	BACKBOARD	KVA	KILOVOLT AMPERES (1000 VOLT-AMPERES)		
		KW	KILOWATTS (1000 WATTS)	SW	SWTCH
C OR COND	CONDUIT			SWBD	SWTCHBOARD
C/T	CURRENT TRANSFORMER	LRA	LOCKED ROTOR AMPS		
CB, C/B	CIRCUIT BREAKER	MCA	MINIMUM CIRCUIT AMPS	TEL	TELEPHONE
CFA	CALL FOR ASSISTANCE	MCB	MAIN CIRCUIT BREAKER	TYP	TYPICAL
CLG	CEILING	MCC	MOTOR CONTROL CENTER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
CPT	CURRENT POTENTIAL TRANS.	MCM	THOUSAND CIRCULAR MILS		
CU	CONDENSING UNIT	MCP	MOTORIZED DAMPER	UF	UNDERFLOOR
		MDP	MAIN DISTRIBUTION PANEL	UG	UNDERGROUND
DC	DIRECT CURRENT	MFR, MFTR	MANUFACTURER	UL	UNDERWRITERS LABORATORIES
DISC. SW	DISCONNECT SWITCH	UP	UP	UTP	UNSHIELDED TWISTED PAIR
DN	DOWN	MIC	MECHANICALLY HELD MICROPHONE		
				V	VOLTS
EO	ELECTRICALLY OPERATED	MLO	MAIN LUGS ONLY	VP	VAPORPROOF
EDH	ELECTRIC DUCT HEATER	MO	MOTOR OPERATED	VSD	VARIABLE SPEED DRIVE
EF	EXHAUST FAN	MTD	MOUNTED	VFD	VARIABLE FREQUENCY DRIVE
EM	EMERGENCY	MAU, MAU	MAKE-UP AIR UNIT		
EP	ELECTRIC PNEUMATIC SWITCH			W/	WITH
ETR, E	EXISTING TO REMAIN	NC	NORMALLY CLOSED	WP	WEATHERPROOF
EUH	ELECTRIC UNIT HEATER	NEC	NATIONAL ELECTRIC CODE		
EWC	ELECTRIC WATER COOLER	NF	NOT FUSED	XFMR, TXFMR	TRANSFORMER
EWI	ELECTRIC WALL HEATER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION		
		NIC	NOT IN CONTRACT		
FA	FIRE ALARM	NL	NIGHT LIGHT		
FACP	FIRE ALARM CONTROL PANEL			EX	EXISTING TO REMAIN.
FCU	FAN COIL UNIT.	NO	NORMALLY OPEN	RE	REMOVE EXISTING.
FLA	FULL LOAD AMPS	NTS	NOT TO SCALE	RL	RELOCATE EXISTING.
				NL	NEW LOCATION OF EXISTING RELOCATED.
GFI, GFI	GROUND FAULT CIRCUIT INTERRUPTER	OC	OCCUPANCY SENSOR	NR	NEW TO REPLACE EXISTING.
G, GND	GROUND			RR	REMOVE AND REPLACE ON NEW SURFACE.

NOTE:
NOT ALL ABBREVIATIONS MAY APPEAR ON THE DRAWINGS.



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TENNIS COURT RENOVATIONS
EAST HARTFORD HIGH SCHOOL
FORBES STREET, EAST HARTFORD, CT

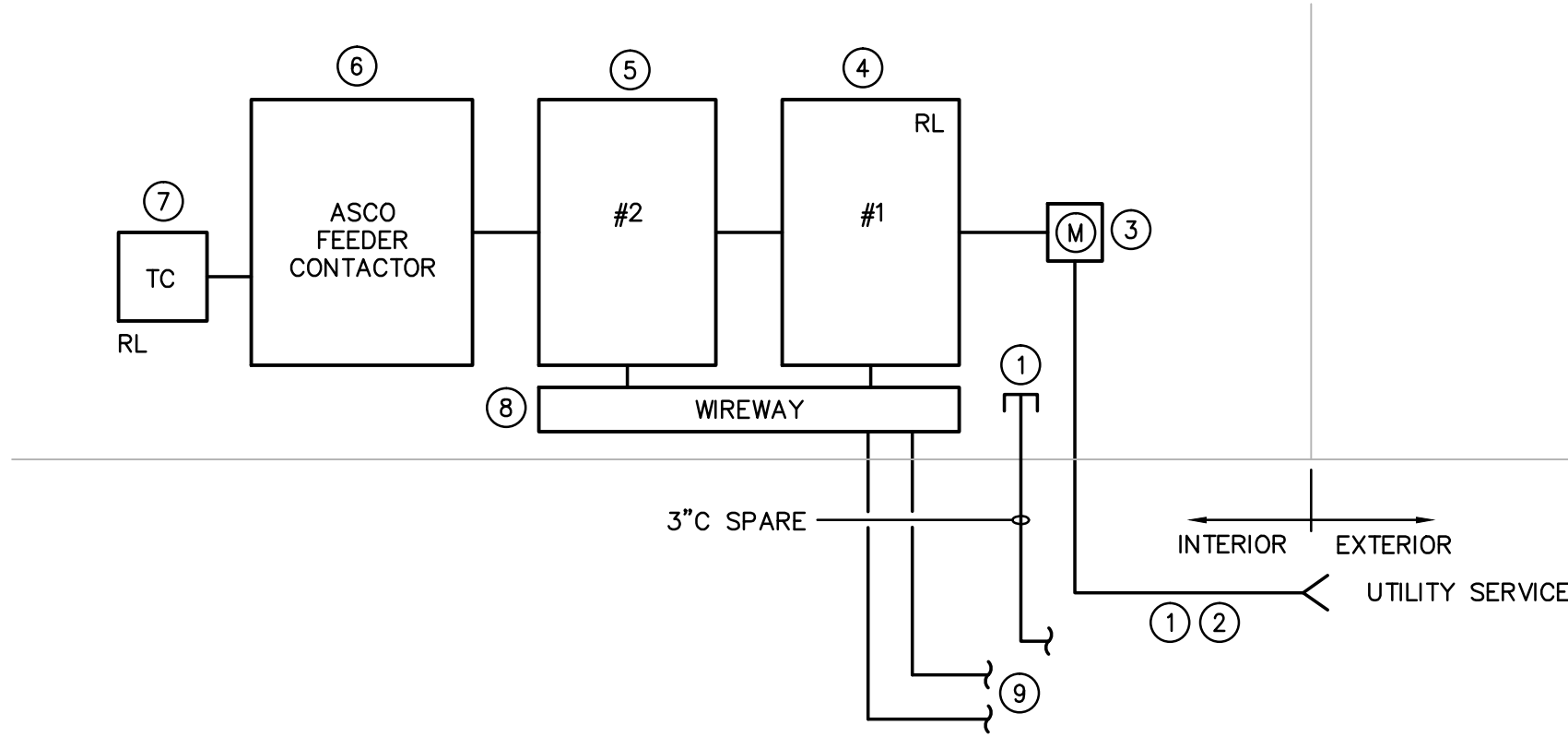
REVISIONS		Desc.
No.	Date	ADDEDUM 002 RE-BID
1	5/28/15	
2	10/25/15	
Designed		S.M.C.
Drawn		R.S.K.
Checked		G.K.
Approved		S.M.C.
Scale		
Project No.		13C4591
Date		05/11/15
CAD File:		E13C459001
Title		ELECTRICAL GENERAL NOTES SYMBOL LEGEND, ABBREVIATIONS AND SPECIFICATIONS
Sheet No.		

Xref (G): I: B013045901E

E0.01

DEMOLITION RISER DIAGRAM KEY NOTES:

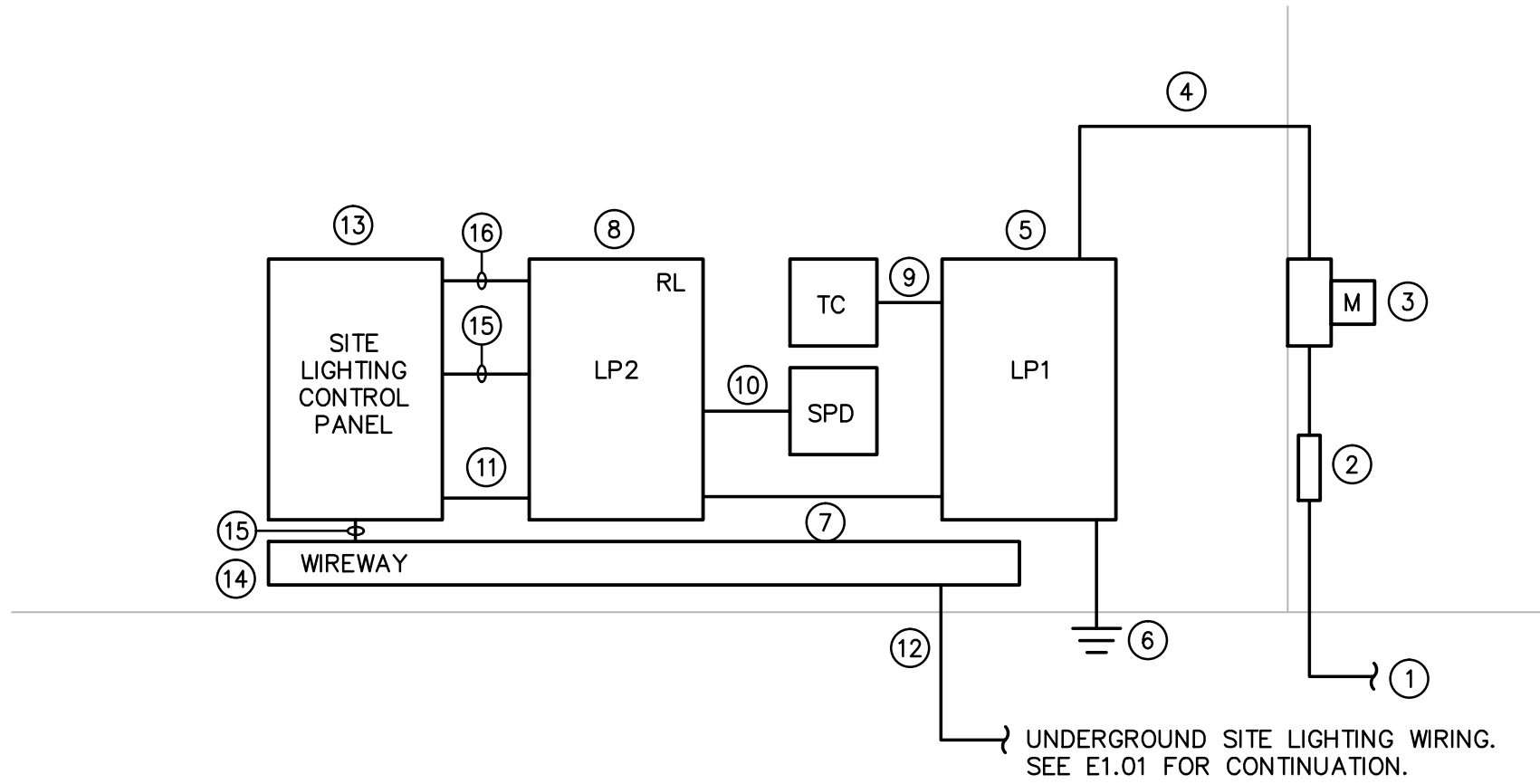
- EXISTING 3" UNDERGROUND SERVICE LATERAL RACEWAY AND (1) 3"C SPARE. REMOVE CONDUIT FROM METER SOCKET TO BELOW GRADE, AND REMOVE UNDERGROUND RACEWAY TO A POINT APPROXIMATELY 4 FEET FROM EDGE OF EXTERIOR FOUNDATION WALL IN PREPARATION FOR EXTENDING RACEWAY UNDERGROUND TO NEW EXTERIOR METER SOCKET LOCATION; PATCH FLOOR AND WALL. COORDINATE RACEWAY REMOVAL WITH UTILITY COMPANY.
- EXISTING SERVICE LATERAL FEEDER OWNED AND MAINTAINED BY UTILITY COMPANY. COORDINATE WITH UTILITY COMPANY THE ADDITIONAL ELECTRICAL LOAD: 25 KW OF NEW LIGHTING LOAD.
- REMOVE EXISTING METER SOCKET; COORDINATE REMOVAL OF METER WITH UTILITY COMPANY.
- REMOVE AT RELOCATE EXISTING PANEL #1; SEE RENOVATION RISER DIAGRAM AND PANEL LP2 FOR ADDITIONAL INFORMATION. JUNCTION OFF BRANCH CIRCUIT WIRING THAT IS EXISTING TO REMAIN AND EXTEND TO NEW LP1 PANEL.
- REMOVE PANEL #2 AND ASSOCIATED WIRING BACK TO SOURCE.
- REMOVE ASCO FEEDER CONTACTOR AND ASSOCIATED WIRING BACK TO SOURCE.
- REMOVE AND RELOCATE EXISTING TIMECLOCK.
- REMOVE EXISTING WIREWAY.
- EXISTING (2) 3"C UNDERGROUND TO BE REMAIN.



1 DEMOLITION RISER DIAGRAM
N.T.S.

RENOVATION RISER DIAGRAM KEY NOTES:

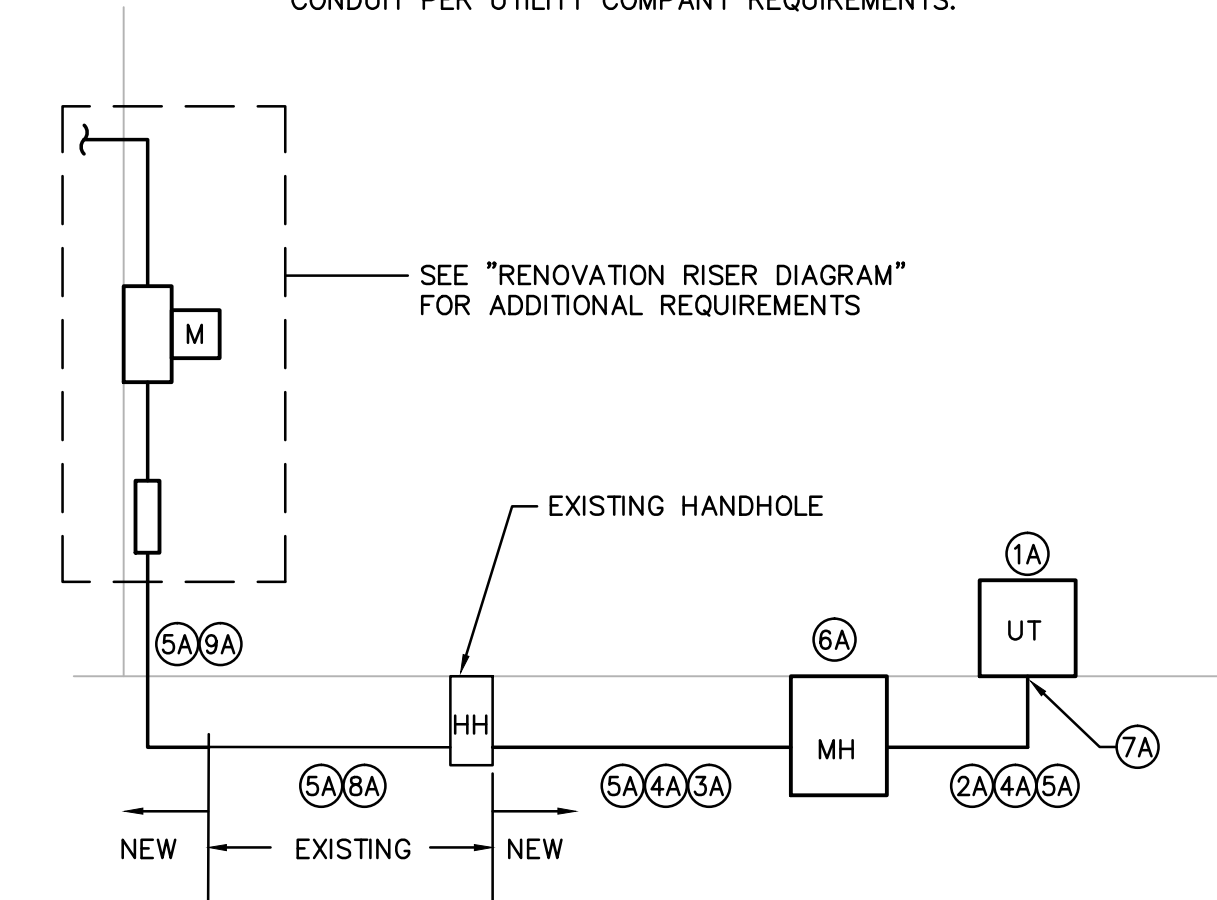
- EXTEND EXISTING SERVICE LATERAL UNDERGROUND TO NEW METER SOCKET LOCATION; EXTEND 3"C SPARE TO ABOVE GRADE LOCATION AND CAP; PROVIDE RMC CONDUIT SWEEP(FOR EACH CONDUIT) FROM BELOW GROUND TO ABOVE GROUND LOCATION AND ASSOCIATED GROUNDING BUSHING, GROUND ROD AND GROUND CONDUCTOR AS REQUIRED BY THE UTILITY COMPANY. COORDINATE ADDITIONAL REQUIREMENTS WITH UTILITY COMPANY.
- PROVIDE SLIP JOINT FITTING BETWEEN UNDERGROUND RACEWAY AND METER SOCKET IN ACCORDANCE WITH UTILITY COMPANY REQUIREMENTS.
- PROVIDE METER SOCKET PER UTILITY COMPANT REQUIREMENTS.
- PROVIDE 3"C - 4#350KCMIL FROM METER SOCKET TO LP1 SERVICE DISCONNECT SWITCH.
- PANEL LP1 SHALL BE SERVICE ENTRANCE RATED. SEE PANELBOARD SCHEDULE FOR ADDITIONAL INFORMATION. EXTEND BRANCH CIRCUIT WIRING THAT IS EXISTING TO REMAIN TO NEW CIRCUIT BREAKERS IN PANEL LP1.
- PROVIDE GROUNDING ELECTRODE SYSTEM PER DETAIL ON THIS DRAWING.
- PROVIDE 2"C - 4#3/0, 1#3G. FROM LP1 FEED-THROUGH LUGS TO 200A MCB IN PANEL LP2.
- RENAME EXISTING PANEL #1 TO LP2. SEE PANELBOARD SCHEDULE FOR ADDITIONAL INFORMATION.
- EXTEND EXISTING BUILDING MOUNTED EXTERIOR LIGHTING BRANCH CIRCUIT WIRING THROUGH RELOCATED TIMECLOCK CONTROLS. MATCH EXISTING WIRING.
- PROVIDE 3/4"C. -4#10, 1#10G. FROM 30A-3P CIRCUIT BREAKER IN PANEL LP2 TO SPD. INSTALL PER MANUFACTURERS REQUIREMENTS.
- PROVIDE 3/4"C. 3#14 FROM SPD TO SITE LIGHTING CONTROL PANEL FOR SPD MONITORING. INSTALL PER MANUFACTURERS REQUIREMENTS.
- EXTEND EXISTING SITE LIGHTING RACEWAYS TO NEW WIREWAY AND TERMINATE; REFERENCE DEMOLITION RISER DIAGRAM KEY NOTE 9 FOR ADDITIONAL INFORMATION.
- SITE LIGHTING CONTROL PANEL AND ASSOCIATED LIGHTING CONTACTORS C1 THROUGH C8 PROVIDED AND INSTALLED BY MUSCO LIGHTING.
- PROVIDE 6"x6" WIREWAY. SPLICE SITE LIGHTING WRING AS REQUIRED TO MAXIMIZE SIZE WIRE PERMITTED TO BE TERMINATED AT CONTACTORS AND/OR CIRCUIT BREAKERS.
- (2) 2-1/2"C FOR SITE LIGHTING WIRING.
- CONTROL PANEL POWER REQUIREMENTS; SEE DWG E1.01 FOR ADDITIONAL INFORMATION.



2 RENOVATION RISER DIAGRAM
N.T.S.

ALTERNATE PARTIAL RISER DIAGRAM NOTES:

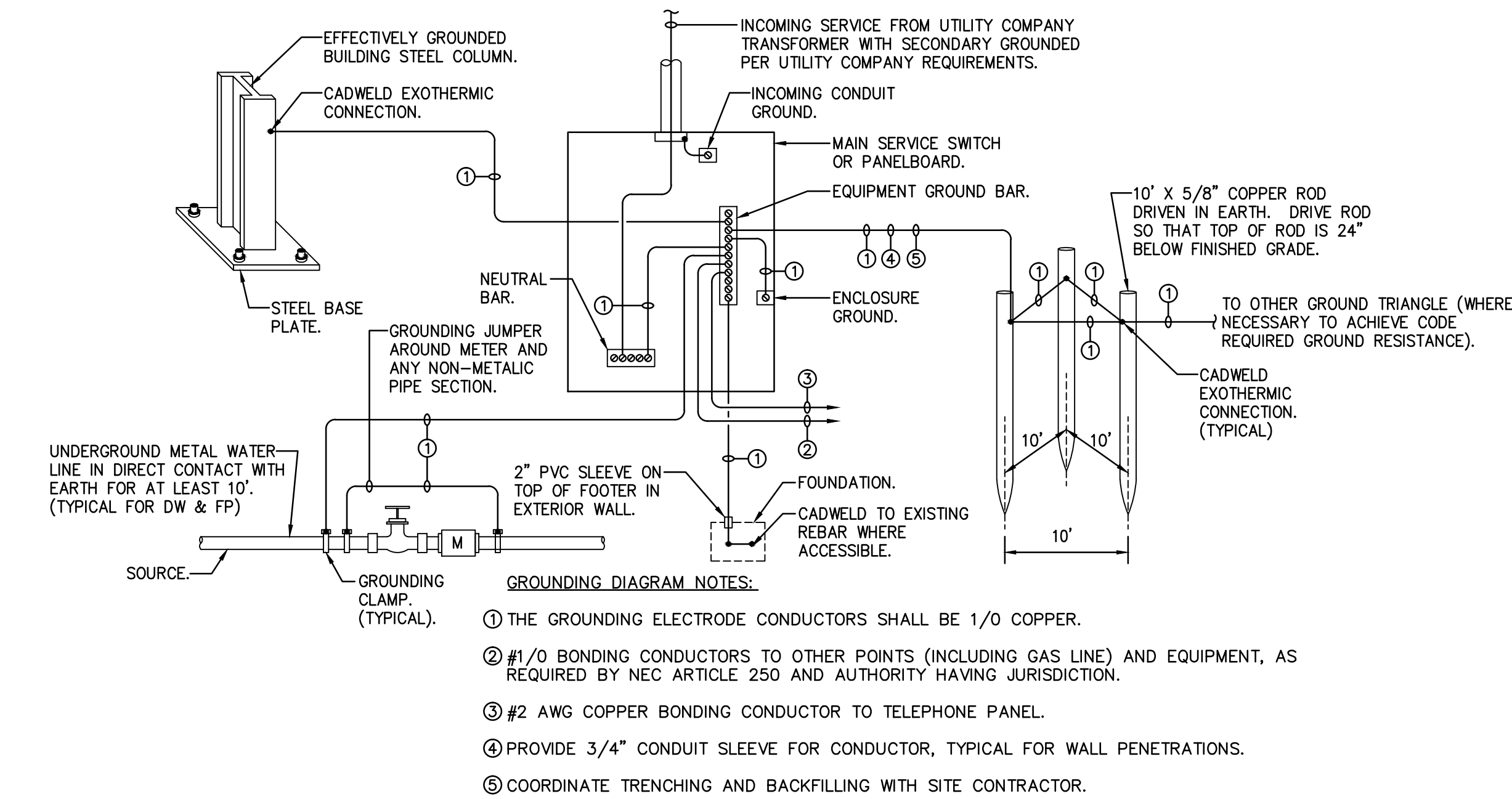
- EXISTING UTILITY TRANSFORMER; COORDINATE REMOVAL AND REINSTALLATION OF TRANSFORMER WITH UTILITY COMPANY.
- (2)4"C UNDERGROUND FROM EXISTING UTILITY TRANSFORMER TO EXISTING MANHOLE, INSTALLED PER UTILITY COMPANY REQUIREMENTS. PROVIDE RMC CONDUIT WITH BELL END FITTINGS AT ENTRANCE TO MANHOLE. GROUND RMC CONDUIT PER UTILITY COMPANY REQUIREMENTS.
- (2)4"C UNDERGROUND FROM MANHOLE TO EXISTING HANDHOLE, INSTALLED PER UTILITY COMPANY REQUIREMENTS. PROVIDE RMC CONDUIT WITH BELL END FITTINGS AT ENTRANCE TO MANHOLE. GROUND RMC CONDUIT PER UTILITY COMPANY REQUIREMENTS.
- COORDINATE EXACT REQUIREMENTS OF RACEWAY SYSTEM WITH SITE CIVIL PLANS.
- SECONDARY CONDUCTORS PROVIDED BY UTILITY COMPANY.
- EXISTING UTILITY MANHOLE; FIELD COORDINATE EXACT LOCATION(S) OF PENETRATIONS AND GROUNDING REQUIREMENTS. PROVIDE REQUIRED CONDUIT LINK SEALS TO MAKE ALL CONDUIT PENETRATIONS WATERTIGHT.
- PROVIDE CONDUIT SEALING BUSHINGS AT END OF EACH NEW CONDUIT TO PREVENT WATER INTRUSION (SIMILAR TO OZ GEDNEY TYPE FR)
- EXISTING (2) 3" UNDERGROUND CONDUIT TO REMAIN.
- EXTEND EXISTING (2) 3"C TO METER SOCKET; INSTALL PER UTILITY COMPANY REQUIREMENTS. PROVIDE RMC CONDUIT SWEEPS AT METER SOCKET; GROUND RMC CONDUIT PER UTILITY COMPANY REQUIREMENTS.



3 ALTERNATE PARTIAL RISER DIAGRAM
N.T.S.

GENERAL NOTES:

- UNDERGROUND RACEWAY SYSTEM TO LIGHT POLES, INCLUDING BUT NOT LIMITED TO CONDUITS, HANDHOLES, FITTINGS, ETC SHALL BE INSTALLED BY THE SITE CONTRACTOR.
- THE MUSCO ELECTRICAL CONTRACTOR SHALL INSTALL ALL CONDUIT RACEWAY SYSTEMS ABOVE GRADE.
- MUSCO ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL SPECIFIED ELECTRICAL AND SECURITY EQUIPMENT, WIRING, AND ASSOCIATED HARDWARE INDICATED ON PLANS.
- "MUSCO ELECTRICAL CONTRACTOR" IS ALSO KNOWN AS "ELECTRICAL CONTRACTOR" IN OTHER LOCATIONS ON THESE PLANS AND SPECIFICATIONS.



3 SERVICE GROUNDING ELECTRODE SYSTEM WIRING DIAGRAM
N.T.S.

PANEL: LP2 (EXISTING)										EXISTING SURFACE STORAGE										
AMPS/MAINS: 200A/200A MCB										K&IC: MOUNTING: LOCATION:										
VOLTAGE/PHASE/WIRE: 208/120V, 3ø, 4W										FEED: FEED THRU LUGS										
CIRCUIT BREAKER										CIRCUIT BREAKER										
Pos.	AMP	POLES	LOAD DESCRIPTION	KVA	PHASE A	PHASE B	PHASE C	KVA	LOAD DESCRIPTION	POLES	AMP	Pos.	Pos.	AMP	POLES	LOAD DESCRIPTION	KVA	PHASE A	PHASE B	PHASE C
1	25	3	T1	2.10	4.20			2.10	T2	3	25	2	NOTE 1	1	25	3	2.10	4.20		
3				2.10		4.20		2.10				4								
5				2.10			4.20	2.10				6								
7	25	3	T3	2.10	4.20			2.10	T4	3	25	8	NOTE 1	7	25	3	2.10	4.20		
9				2.10		4.20		2.10				10								
11				2.10			4.20	2.10				12								
13	25	3	T3	2.10	4.20			2.10	T4	3	25	14	NOTE 4	13	25	3	2.10	4.20		
15				2.10		4.20		2.10				16								
17				2.10			4.20	2.10				18								
19	25	3	T5	2.10	4.20			2.10	T6	3	25	20	NOTE 3	19	25	3	2.10	4.20		
21				2.10		4.20		2.10				22								
23				2.10			4.20	2.10				24								
25	20	1	CONTROL PWR	0.60	0.60				SPARE	1	20	26	NOTE 9	25	20	1	0.60	0.60		
27	20	1	SPARE						SPARE	1	20	28	NOTE 7	27	20	1				
29	20	1	SPARE						SPARE	1	20	30		29	20	1				
31	20	1	SPARE						SPARE	1	20	32	NOTE 8	31	20	1				
33	20	1	SPARE						SPARE	1	20	34		33	20	1				
35	20	1	SPARE						SPARE	1	20	36		35	20	1				
37	20	1	SPARE						SPARE	1	20	38	NOTE 9	37	20	1				
39	20	1	SPARE						SPD	3	30	40	NOTE 6	39	20	1				
41		1	SPACE									42		41						
43		1	SPACE									44		43						
TOTAL KVA LP2 (EXISTING)					17.40	16.80	16.80													

- NOTES:
- REMOVE AND RELOCATE (3) 20A, 1P CIRCUIT BREAKERS TO CIRCUIT BREAKER POSITIONS INDICATED BELOW. INSTALL 25A, 3P CIRCUIT BREAKER IN SPARE SPACES; MATCH EXISTING MANUFACTURER AND AIC RATING.
 - REMOVE AND RELOCATE (2) 20A, 1P CIRCUIT BREAKERS TO CIRCUIT BREAKER POSITIONS INDICATED BELOW. INSTALL 25A, 3P CIRCUIT BREAKER IN SPARE SPACES; MATCH EXISTING MANUFACTURER AND AIC RATING.
 - INSTALL 25A, 3P CIRCUIT BREAKER IN SPARE SPACES; MATCH EXISTING MANUFACTURER AND AIC RATING.
 - REMOVE AND RELOCATE (1) 20A, 1P CIRCUIT BREAKERS TO CIRCUIT BREAKER POSITIONS INDICATED BELOW. INSTALL 25A, 3P CIRCUIT BREAKER IN SPARE SPACES; MATCH EXISTING MANUFACTURER AND AIC RATING.
 - 20A, 1P CIRCUIT BREAKER EXISTING TO REMAIN.
 - REMOVE EXISTING 15A, 3P CIRCUIT BREAKER, AND REPLACE WITH (1) 20A, 1P C/B REMOVED FROM PANEL C/B POSITION ABOVE.
 - REMOVE 20A, 2P CIRCUIT BREAKER AND REPLACE WITH (2) 20A, 1P C/B'S REMOVED FROM PANEL C/B POSITIONS ABOVE.
 - REMOVE 60A, 3P CIRCUIT BREAKER AND REPLACE WITH (3) 20A, 1P C/B'S REMOVED FROM PANEL C/B POSITIONS ABOVE.
 - ADD 20A, 1P C/B, REMOVED FROM PANEL C/B POSITION ABOVE, TO SPARE SPACE.
 - ADD 30A, 3P C/B IN SPARE SPACES; MATCH EXISTING MANUFACTURER AND AIC RATING.

PANEL: LP1(NEW)					65 SURFACE STORAGE							
AMPS/MAINS: 400A/300A MCB					K&IC: MOUNTING: LOCATION:							
VOLTAGE/PHASE/WIRE: 208/120V, 3ø, 4W					FEED THRU LUGS							
NOTES:												
CIRCUIT BREAKER					CIRCUIT BREAKER							
Pos.	AMP	POLES	LOAD DESCRIPTION	KVA	PHASE A	PHASE B	PHASE C	KVA	LOAD DESCRIPTION	POLES	AMP	Pos.
1	20	1	EXISTING	1.60	3.20			1.60	EXISTING	1	20	2
3	20	1	EXISTING	1.60		3.20		1.60	EXISTING	1	20	4
5	20	1	EXISTING	1.60			3.20	1.60	EXISTING	1	20	6
7	20	1	EXISTING	0.80	1.60			0.80	EXISTING	1	20	8
9	20	1	EXISTING	0.80		1.60		0.80	EXISTING	1	20	10
11	20	1	EXISTING	0.80			1.60	0.80	EXISTING	1	20	12
13	20	1	EXISTING	0.80	1.60			0.80	EXISTING	1	20	14
15	20	2	EXISTING	1.60		2.40		0.80	EXISTING	2	20	16
17				1.60			1.60					18
19	15	3	EXISTING	0.80	0.80				SPARE	1	20	20
21				0.80		0.80			SPARE	1	20	22
23				0.80			0.80		SPARE	1	20	24
25	20	1	SPARE						SPARE	1	20	26
27	20	1	SPARE						SPARE	1	20	28
29	20	1	SPARE						SPACE	1		30
31	20	1	SPARE						SPACE	1		32
33	20	1	SPARE						SPACE	1		34
35			SPACE						SPACE	1		36
37			SPACE						SPACE	1		38
39			SPACE						SPACE	1		40
41			SPACE						SPACE	1		42
TOTAL KVA LP1(NEW)					7.20	8.00	7.20					
TOTAL KVA LP1(NEW)& LP2					24.60	24.80	24.00					

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GENERAL NOTES:

- SEE SPECIFICATIONS, SCHEDULES, RISERS, DETAIL, NOTES, LEGEND, ABBREVIATIONS, ETC. FOR ADDITIONAL INFORMATION AND REQUIREMENTS.
- ELECTRICAL CONTRACTOR SHALL PROVIDE GROUND ROD AND ASSOCIATED GROUND CONDUCTOR AT EACH LIGHT POLE LOCATION. GROUNDING SHALL CONSIST OF 10' x 5/8" COPPER CLAD GROUND ROD, #6 BARE COPPER GROUND FROM POLE GROUND LUG TO GROUND ROD; TERMINATE AT GROUND LUG BY APPROVED MECHANICAL MEANS AND AT GROUND ROD BY EXOTHERMIC WELD.
- ELECTRICAL CONTRACTOR SHALL EXTEND LIGHT POLE RACEWAY THRU UNDERGROUND ACCESS HOLE AND TERMINATE AT ABOVE GROUND ACCESS HOLE LOCATION.
- ELECTRICAL CONTRACTOR SHALL EXTEND LIGHT POLE FEEDER UP TO ASSOCIATED FEEDER DISCONNECT PRIMARY LUG LOCATION.
- ELECTRICAL CONTRACTOR SHALL REFER TO TENNIS COURT LIGHT POLE DETAIL ON DRAWING DN-6 FOR ADDITIONAL INFORMATION.
- ELECTRICAL CONTRACTOR SHALL COORDINATE ALL TERMINATIONS AT LIGHT POLES WITH MUSCO LIGHTING CONTRACTOR.
- UNDERGROUND SPLICES AND SPLICES WITHIN LIGHTPOLES SHALL BE WEATHERPROOF TYPE.
- ELECTRICAL CONTRACTOR SHALL INCLUDE IN THEIR BID SPLICING OF LIGHT POLE FEEDERS AT ABOVE GROUND ACCESS HOLE LOCATION WITHIN LIGHT POLE BASE FOR TERMINATION TO LIGHTPOLE DISCONNECT, AND WITHIN INTERIOR WIREWAY LOCATION FOR TERMINATION TO CONTACTOR PANEL.
- UNDERGROUND RACEWAY SYSTEM TO LIGHT POLES, INCLUDING BUT NOT LIMITED TO CONDUITS, HANDHOLES, FITTINGS, ETC SHALL BE INSTALLED BY THE SITE CONTRACTOR. THE MUSCO ELECTRICAL CONTRACTOR SHALL INSPECT ALL UNDERGROUND RACEWAYS UNTIL THE MUSCO ELECTRICAL CONTRACTOR APPROVES THE INSTALLATION. THE SITE ELECTRICAL CONTRACTOR SHALL COORDINATE REQUIREMENTS WITH THE MUSCO ELECTRICAL CONTRACTOR.
- THE MUSCO ELECTRICAL CONTRACTOR SHALL INSTALL ALL CONDUIT RACEWAY SYSTEMS ABOVE GRADE.
- MUSCO ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL SPECIFIED ELECTRICAL AND SECURITY EQUIPMENT, WIRING, AND ASSOCIATED HARDWARE INDICATED ON PLANS.
- "MUSCO ELECTRICAL CONTRACTOR" IS ALSO KNOWN AS "ELECTRICAL CONTRACTOR" IN OTHER LOCATIONS ON THESE PLANS AND SPECIFICATIONS. HANDHOLES SHALL BE INSTALLED PARALLEL WITH LOCAL SITE FEATURES TYPICAL.

PROJECT KEY NOTES:

- (CU-XHHW-2) 3/8, 1#BND IN DEDICATED UNDERGROUND CONDUIT FROM LIGHTPOLE BASE TO EXISTING HANDHOLE NEAR CONCRETE BLOCK BUILDING. ROUTE WIRING FROM EXISTING HANDHOLE, THRU EXISTING (2) 3" UNDERGROUND RACEWAY TO NEW WIREWAY AND CONTACTOR PANEL. EVENLY DIVIDE BRANCH CIRCUIT WIRING BETWEEN THE (2) RACEWAYS. 295' MAX CIRCUIT LENGTH WITHOUT UPSIZING CONDUCTORS. SEE SITE CIVIL PLANS FOR ADDITIONAL REQUIREMENTS.
- (CU-XHHW-2) 3/4, 1#4GND IN DEDICATED UNDERGROUND CONDUIT FROM LIGHTPOLE BASE TO EXISTING HANDHOLE NEAR CONCRETE BLOCK BUILDING. ROUTE WIRING FROM EXISTING HANDHOLE, THRU EXISTING (2) 3" UNDERGROUND RACEWAY TO NEW WIREWAY AND CONTACTOR PANEL. EVENLY DIVIDE BRANCH CIRCUIT WIRING BETWEEN THE (2) RACEWAYS. 695' MAX CIRCUIT LENGTH WITHOUT UPSIZING CONDUCTORS. SEE SITE CIVIL PLANS FOR ADDITIONAL REQUIREMENTS.
- (CU-XHHW-2) 3/8, 1#6GND IN DEDICATED UNDERGROUND CONDUIT FROM LIGHTPOLE BASE TO EXISTING HANDHOLE NEAR CONCRETE BLOCK BUILDING. ROUTE WIRING FROM EXISTING HANDHOLE, THRU EXISTING (2) 3" UNDERGROUND RACEWAY TO NEW WIREWAY AND CONTACTOR PANEL. EVENLY DIVIDE BRANCH CIRCUIT WIRING BETWEEN THE (2) RACEWAYS. 465' MAX CIRCUIT LENGTH WITHOUT UPSIZING CONDUCTORS. SEE SITE CIVIL PLANS FOR ADDITIONAL REQUIREMENTS.
- ENGRAVE HANDHOLE COVER "ELECTRIC". SEE SITE CIVIL PLANS FOR ADDITIONAL REQUIREMENTS.
- SECURITY CAMERA WIRING HANDHOLE. CONTRACTOR SHALL JUNCTION OFF EXISTING SECURITY CAMERA WIRING FROM REMOVED LIGHT POLE. CONTRACTOR SHALL JUNCTION OFF WIRING IN (2) UNDERGROUND HANDHOLE (1) FOR POWER AND (1) FOR LOW VOLTAGE) AND EXTEND IN UNDERGROUND CONDUITS TO LIGHT POLE T6 AND TERMINATE AT RELOCATED SECURITY CAMERA LOCATION. CONTRACTOR SHALL EXTEND CONDUIT UP TO ABOVE GROUND HANDHOLE LOCATION LOCATED WITHIN LIGHT POLE. CONTRACTOR SHALL TRANSITION TO 1" LFMC (FOR LOW VOLTAGE WIRING) AND EXTEND TO SECURITY BRACKET EXT HOLE LOCATION. SEE SITE CIVIL PLANS FOR ADDITIONAL REQUIREMENTS.
- CONTRACTOR SHALL RELOCATE EXISTING SECURITY CAMERA AND ARM TO NEW T6 LIGHT POLE. COORDINATE MOUNTING REQUIREMENTS WITH MUSCO LIGHTING CONTRACTOR.
- CONTRACTOR SHALL PAINT FLOOR WITH YELLOW STRIPES TO INDICATE WORKING PROPER WORKING CLEARANCES IN ACCORDANCE WITH NEC 110.26. CONTRACTOR SHALL PROVIDE SIGNAGE ON PANELBOARD INDICATING THE REQUIRED WORKING CLEARANCE, AND INDICATING THAT THE AREA WITHIN THE WORKING CLEARANCE CAN NOT BE USED FOR STORAGE.
- EXISTING UNDERGROUND RACEWAY TO BUILDING TO BE REUSED. EXTEND RACEWAYS TO NEW WIREWAY ON BUILDING INTERIOR AND TERMINATE, SEE RENOVATION RISER DIAGRAM ON E0.02 FOR ADDITIONAL INFORMATION. SEE SITE CIVIL PLANS FOR ADDITIONAL REQUIREMENTS.
- SEE SITE CIVIL PLANS FOR ADDITIONAL REQUIREMENTS OF NEW UNDERGROUND SERVICE LATERAL. SEE RISER DIAGRAM ON DRAWING E0.02 FOR ADDITIONAL REQUIREMENTS.
- HANDHOLE(S): ENGRAVE HANDHOLE COVER "SECURITY". SEE SITE CIVIL PLANS FOR ADDITIONAL REQUIREMENTS.
- CONTROL PANEL POWER: 20A, 1P, 120V HOMERUN CIRCUIT TO INDICATED PANEL.

TENNIS COURT RENOVATIONS EAST HARTFORD HIGH SCHOOL FORBES STREET, EAST HARTFORD, CT

REVISIONS		Desc.
No.	Date	
1	5/28/15	ADDENDUM 002
2	10/23/15	RE-BID

Designed S.M.C.
Drawn R.S.K.
Checked G.K.
Approved S.M.C.
Scale 1/16"=1'-0"
Project No. 13C4591
Date 05/11/15

CAD File: E13C4591101

Title
**ELECTRICAL
SITE PLAN**

Sheet No.

E1.01